

## **Construction Site Stormwater**

The Clean and Clear Action Plan recognizes that construction sites in Vermont are a significant source of phosphorus-laden sediment into Lake Champlain and its watersheds. The Plan increasing the staff of the Department of Environmental Conservation (DEC) to provide education on erosion prevention and sediment control practices, increase permit compliance, and provide technical assistance to the regulated public.

### **Erosion Prevention and Sediment Control Program:**

The goal of this program is to protect water quality from sediment-laden discharges from construction sites. It does so by educating contractors about the harm such discharges can do and how they can be prevented. This includes, through training, increased awareness of the importance of erosion control. The program seeks to achieve permit compliance through increased education and outreach.

The Water Quality Division (WQ) administers the federally mandated Construction General Permit Program, requiring from construction sites of five or more acres in size, permits for stormwater runoff. The regulations in Vermont have been in effect since late 1996 but have never been fully implemented.

In March 2003, EPA dropped the federally mandated permitting threshold from five acres to one acre. While other states immediately adopted this threshold, Vermont was more cautious to do so. We are currently ramping up the implementation of this program in the following ways:

- Development of a “Homebuilders Manual” that would provide enough guidance to allow a homeowner to develop the required application and erosion prevention and sediment control plan themselves, without needing to hire an engineer.
- Revision to the 1987 Erosion Control Handbook to reflect practices that can be used on small (less than five acre) construction sites.
- Extensive outreach to the public regarding the proposed implementation of this program including several public hearings, multiple trainings for contractors and engineers, and many presentations to those in positions with regular contact with the affected public (i.e. lawyers, municipal officials, engineers).

In June of 2004, we hired a Water Quality Engineer with Clean and Clear funding. This enabled us to reduce our permitting timeframe from approximately 90 days to approximately 45 days or less (currently at approximately 25 days during the winter months) . With further staffing, we will reduce this permitting time even further.

Coupled with permitting is the critical element of education regarding new technologies that will allow projects to save money and time while protecting the environment. This fall and winter, we co-hosted training with the International Erosion Control Association for over 250 contractors and engineers in Burlington. For the first time in the three years we have been holding trainings, most of those in attendance were contractors. This is significant because contractors are in positions to directly influence the amount of runoff from construction sites by preventing discharge situations as they arise.



**Figure 1. Over 100 engineers and contractors attended an erosion prevention training and tradeshow in Burlington on Nov. 15 co-sponsored by ANR Water Quality Division. Another 150 attended trainings in St. Johnsbury and Rutland.**

Last winter, we offered free training to several hundred engineers, contractors, and municipal officials affected by the regulations relating to large (five or more acres) construction projects and the permitting requirements. The program, dubbed “The Good, The Bad, and the Dirty” received accolades as meeting a need that has long been vocalized by contractors and engineers--train us to do better.

With the additional resources, we plan to visit most construction sites in an effort to assist applicants with achieving compliance with the law. Our experience has been that most entities want to comply with the laws and erosion practices, but because no training was offered in Vermont until recently, many are still unaware of what their permit requirements are. To date we have visited approximately 10 sites – each of these was very significantly out of compliance with the approved erosion prevention plans. The need for additional training remains clear.

However, most sites, with a little help in understanding what is required, are able to turn their sites around to prevent significant discharges of sediment to Lake Champlain. One site serves as an example of the success the program can have--with adequate staffing. DEC staff upon receipt of a complaint from a concerned citizen, visited a construction site in Williston. While at the site, we observed numerous violations, lack of permit awareness (the applicant had retained an engineer to obtain the permit, but had no awareness of this permit), significant erosion problems, and potential discharges into wetlands and impaired waters (see Figure 2). We worked with the applicant, both on site and off site, to bring the project into compliance, walking both the landowner and the contractor through the permits and the requirements within. Upon a follow-up site inspection, the site was a model in erosion and sediment control (see Figure 3). The contractor has become very diligent and is now setting a standard for regulated contractors. Their response prompted the Department to consider the implementation of an annual contractors award. We recently contacted the president of the company to commend the fine work of his staff.



**Figure 2. Site prior to compliance visit. Exposed soils prone to erosion to adjacent wetland and stream.**



**Figure 3. Site after DEC Construction Erosion Program compliance visit. Soils are stabilized temporarily while construction is in full swing and in full compliance with permit requirements.**



**Figure 4. Site after compliance visit and assistance.**

## Strategies:

As outlined in the TMDL, we seek funding for the next fiscal year to hire additional staff for the following functions:

Position	Duties
Training and Inter-Agency Coordinator	Training of general contractors, construction personnel, engineers Training between the federal, state, regional, and local levels
Permit review, applicant assistance, enforcement, and compliance	Review erosion and sediment control plans; ensure implementation at the construction site; assist applicant in complying with the federal and state laws; pursue enforcement and corrective actions where necessary; implement the erosion control aspects of the Lake Champlain Phosphorus TMDL

A further description follows:

### ***Training and Inter-Agency Coordinator. One FTE.***

- Training of general contractors and construction personnel for proper implementation of effective sediment and erosion control measures. ANR is currently the only source for erosion prevention training for the private sector in Vermont.
- Training of engineers for the proper components and strategies of erosion and sediment control measures. ANR is currently the only source for erosion training for the private sector in Vermont.
- Creating training interaction between the federal, state, regional, and local levels, that will raise awareness of the requirements and necessity of effective sediment and erosion control.

### ***Permit Review, applicant assistance, enforcement, and compliance. One FTE.***

- Additional staff at the Agency of Natural Resources or in the District Offices will be required to fully implement the erosion control aspects of the Lake Champlain Phosphorus TMDL. Staff will be necessary to review permits, assist applicants in the preparation of erosion prevention and sediment control plans and permit application, and enforce the erosion control plans where necessary and to perform site visits prior to, during, and after construction to ensure compliance in the five districts in the Lake Champlain Basin.

In addition, the Department continues to work to revise the Erosion Control Handbook for use by engineers, contractors, and the regulated public. We have secured funding for the manual and are currently obtaining a technical entity to draft the manual for review by DEC. The current handbook was originally published in 1982 and was last revised in 1987. This handbook is considered the official document guiding erosion and sediment control for construction sites throughout the state, including municipal guidance.

In order to track the progress of the Clean and Clear Action Plan with respect to construction site discharges, the Construction component of the Stormwater Section will monitor the following set of program indicators.

**Table 1. Measuring Success: Performance Measures Summary Table**

<b>Performance Measures</b>	<b>Winter 2004</b>	<b>Spring 2005</b>	<b>Summer 2005</b>	<b>Fall 2005</b>	<b>Winter 2006</b>	<b>Spring 2006</b>	<b>Summer 2006</b>	<b>Fall 2006</b>
Site Achieving a 75% or greater compliance with authorized plans and permits	10	20	30	40	50	60	70	80
Training Attendees	200	300	0	200	300	200	0	0
Number of Site Visits	30	20	40	25	30	20	40	25
Percentage of PEP times Met	90	90	90	91	95	95	95	95

The program seeks to balance all three crucial components of a permitting program: education, enforcement, and permitting. The utilization of Clean and Clear funds for additional positions will allow this to happen.